ABSTRACT OF THE DISCLOSURE

[0036]   A panoramic visualization system has multiple cameras with overlapping fields of view. A pointing device supplies view port direction information to a processing system, which blends the fields of view to produce panoramic view data that represents the panoramic view imaged by the cameras. The processing system also produces view port data along the view port direction. The processing system uses a vision processing board. A display device images the view port data to show an image area. The processing system beneficially corrects for the relative positions of the cameras, for the lens distortions of the individual cameras, and for roll, pitch, and yaw. The system may include an auto-track assembly that automatically moves the view port to track a moving object, while the processing system may enable multiple users to view multiple view ports. The cameras are beneficially mounted on a vehicle.